



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| (51) International Patent Classification ⁷ : H04N 5/445 | | A1 | (11) International Publication Number: WO 00/40014 |
| | | | (43) International Publication Date: 6 July 2000 (06.07.00) |
| (21) International Application Number: PCT/US99/30632 | | (81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). | |
| (22) International Filing Date: 22 December 1999 (22.12.99) | | | |
| (30) Priority Data: 60/114,076 28 December 1998 (28.12.98) US | | | |
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(54) Title: METHOD FOR OPERATING A VIDEO PROCESSING APPARATUS VIA AN ELECTRONIC MAIL MESSAGE

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|---|---------------------------------|--------------|--------|---------|
| | | | | |
| | CLICK HERE TO TUNE/SETUP RECORD | | | |
| ANTHONY | GO BACK | SAVE | DELETE | FORWARD |
| GET*SEND | REPLY | REPLY TO ALL | PRINT | SENDER |
| READ | FROM: ANTHONY | | | |
| WRITE | Cc: 502 | | | |
| ADDRESSES | DATE: 6/12/98, 12:06PM | | | |
| FOLDERS | SUBJECT: RECORD 506 | | | |
| OPTIONS | PASSWORD: NIPPER | | | |
| VIEW ADS | 206 | | | |
| | 7PM | | | |
| | 7:30PM | | | |
| | 6/12/99 | | | |
| | SP | | | |
| PRESS ENTER TO GO BACK TO THE PREVIOUS SCREEN | | | | |

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(57) Abstract

A video processing apparatus receives an electronic message comprising control information, via the Internet from a device interconnected thereto. The message includes control information, which is used by the video processing apparatus to control an operating mode thereof. The control information may include both time and channel data as well as a recording command for programming a timer. The message may contain a password, which is used to verify the authenticity of the message. Alternately, the control information may only include program data, which is passed to the electronic program guide to determine the time and channel information associated with the program data.

METHOD FOR OPERATING A VIDEO PROCESSING APPARATUS VIA AN ELECTRONIC MAIL MESSAGE

FIELD OF INVENTION

5 This invention generally relates to a method for operating a video processing apparatus using an electronic mail message for providing control information.

BACKGROUND OF INVENTION

10 Electronic Program Guides (EPGs) allow viewers to select any channel at any time during some period into the future, e.g., up to seven days forward. Once a particular program is selected, for example, by highlighting, the viewer can perform functions pertaining to that selected program. For instance, the viewer could instantly switch to that program if it is currently being aired.

15 Viewers could also program one touch video cassette recording (VCR) or the like if the television is properly configured and connected to a recording device.

 Although electronic program guides provide a convenient control interface, the use of EPGs is limited to situations where a user is present to view and interact with the EPG. There is consequently a need in the art for a

20 convenient way to permit operation of a video processing apparatus remotely using an electronic mail message to provide the control information that is necessary for operating the apparatus.

SUMMARY OF THE INVENTION

25 The present invention resides, in part, in recognition of the described problem and, in part, in providing a solution to the problem. The present invention provides a convenient way of incorporating into an electronic message, control information that may be used to operate a video processing apparatus, such as a television receiver, a video recording device (e.g., VCR), a satellite receiver,

30 digital video disk (DVD), a set-top box or the like. The present invention links the traditional functions of a video processing apparatus with those of a personal computer, particularly, electronic communication via the Internet to achieve the solution. Employing this invention with an intranet, local network, or the like is within the scope of the present invention.

DETAILED DESCRIPTION

The television receiver shown in Fig. 1 is capable of processing both analog NTSC television signals and Internet information. Descriptions of the remaining well-known functions of the television receiver shown in Figure 1 are not provided except where necessary for understanding the present invention. Tuner 1105 and IF processor 1130 operate in a conventional manner for tuning and demodulating a particular television signal that is included in signal RF_IN. The system shown in FIG. 1 also includes a main microprocessor 1110 for controlling components of the television receiver such as tuner 1105, picture-in-picture processing unit 1140, video signal processor 1155, and Gemstar® data processing module 1160.

Main microprocessor 1110 also controls the operation of a communications interface unit 1113 for providing the capability to upload and download information to and from the Internet. Communication interface unit 1113 includes, for example, a modem for connecting to an Internet service provider, e.g., via a telephone line or via a cable television line. The communication capability allows the system shown in Figure 1 to provide electronic message capability and Internet related features such as web browsing in addition to receiving television programming. CPU 1112 controls functions included within microprocessor 1110, for example, auxiliary data processor 1115 and on-screen display (OSD) processor 1117. Auxiliary data processor 1115 extracts auxiliary data such as Gemstar® data from video signal PIPV.

Gemstar® data, which provides program guide data (e.g., EPG) information in a known format, is typically received only on a particular television channel and the television receiver must tune that channel to extract Gemstar® data usually during a time period when the television receiver is typically not in use (e.g., 2:00 AM). At that time, CPU 1112 configures decoder 1115 such that auxiliary data is extracted from horizontal line intervals such as line 16 that are used for Gemstar® data. For an EPG display, the display data included in the EPG display is produced by OSD processor 1117 and included in the output signal by VSP 1155 in response to fast switch signal FSW.

An exemplary embodiment of the features of the system shown in FIG. 1 that have been described thus far comprises an ST9296 microprocessor produced by SGS-Thomson Microelectronics; an M65616 picture-in-picture

information, are identified by their Packet Identifiers (PIDs) contained within header information

The user interface incorporated in the video receiver shown in Figure 2 enables a user to activate various features by selecting a desired feature from an on-screen display (OSD) menu, for example, an electronic program guide (EPG).

Packets received by decoder 55 from units 45 and 50 that contain program content including audio, video, caption, and other information, are directed by unit 65 from decoder 55 to the designated application device buffers in packet buffer 60. Application control unit 70 sequentially retrieves the audio, video, caption and other data from the designated buffers in buffer 60 and provides the data to audio and video decoders 80 and 85 and high speed data port 75.

In addition, controller 115 is coupled to a communication interface unit 116 that operates in a manner similar to interface unit 1113 of Figure 1. That is, unit 116 provides the capability to upload and download information to and from the Internet. Communication interface unit 116 includes, for example, a modem for connecting to an Internet service provider, e.g., via a telephone line or via a cable television line. The communication capability allows the system shown in Figure 2 to provide electronic message capability and Internet related features such as web browsing in addition to receiving television programming.

Fig. 3 is a software flow chart of an exemplary program which, according to the present invention, may be executed by controller 1110 of Fig. 1, controller 115 of Fig. 2, or any other suitably programmed control arrangement of an electronic host device. The term "electronic host device" as used herein is not limited to television receivers, video recording devices, digital video disks, or set-top boxes, but rather encompasses hybrids thereof (e.g., PCTVs), satellite television and/or data signal converters, program guide receiver units, and the like, regardless of whether incorporated into a television receiver or personal computer or connected externally thereto.

The exemplary program 300, when executed, facilitates processing of received electronic messages, as well as electronic linking of electronic messages to programming information. The exemplary program will be described below only with respect to the exemplary hardware implementation of an electronic host device shown in Fig. 1.

Now, by sending an electronic message to the television, a user can remotely control the television. For example, via an electronic message sent perhaps from the office, the user can "program" the television to turn-on and select a certain program at a desired time. That way, a user can program his television to turn-on and select the evening news at six o'clock so that upon entering his home the news will be on. Another example would be to permit a user to set up a recording event from a remote location. For example, if the user forgot to program his VCR prior to leaving his home then by sending an electronic message the user can set up the desired recording.

Such a recording may be achieved by either directly programming a timer in a recording device or by setting-up a "one-touch" recording in a television receiver. If the message is sent directly to a recording device, the message should include the necessary time and channel information that is required to program a timer. If the message is sent to the television receiver, or any other video processing apparatus that is capable of receiving and processing an electronic program guide, then the message may only contain program information, for example, the name of the program. In such a situation, the electronic program guide may be searched for a program that satisfies the criteria (i.e., the program information). The necessary time and channel information can be determined via the electronic program guide.

Requesting a recording may create a conflict with a pre-existing programmed event in a video recording apparatus. In such a situation, the latest event could take priority or a return message could be sent to the user advising of the conflict and providing the user an opportunity to resolve the conflict. The conflict could be resolved, perhaps, by overriding the pre-existing programmed event or by canceling the requested recording

The context of the message may include a password, channel number, start and stop times, date and tape speed. Using a consistent subject header, for example "RECORD", the video processing apparatus could determine whether a particular incoming electronic message contained control information. In addition, use of any consistent structure for the message, for example, a specific field which includes the word "RECORDING", could be utilized. Further, a dedicated web-site may be utilized to assist the user in constructing a proper message. An advantage of a dedicated web-site would be the ability to send a secure (i.e., encrypted) electronic message. This would remove the possibility of

aired, automatically tuning to the program in the future if it has yet to be aired and is scheduled for broadcast at a later time (e.g., by setting an appropriate timer or the like), or automatically recording of the program.

As demonstrated above, the interface of the present invention is particularly well suited for use in connection with an electronic program guide (EPG). The electronic program guide (EPG) in this regard may constitute all or a portion of the menu 400.

Preferably, the television-encompassing version of the host device shown in Figure 1 is associated with a recording device (not shown) and the selector is actuatable to effect recording of the television program when the electronic message indicates that the user requests a recording.

While the present invention finds much usefulness in the realm of electronic host devices, which are connected to or defined by a television set, the present invention is not limited to such electronic host devices. The present invention may be implemented, for example, with a computer as the electronic host device. It is to be understood that the embodiments and variations shown and described herein are for illustrations only and that those skilled in the art may implement various modifications without departing from the scope and spirit of the invention.

8. The method of Claim 2 wherein said control information comprises program data.

5 9. The method of Claim 8 further comprising passing said program data to the electronic program guide to determine the time and channel information associated with said program data, said program data corresponding to a program listed in said electronic program guide.

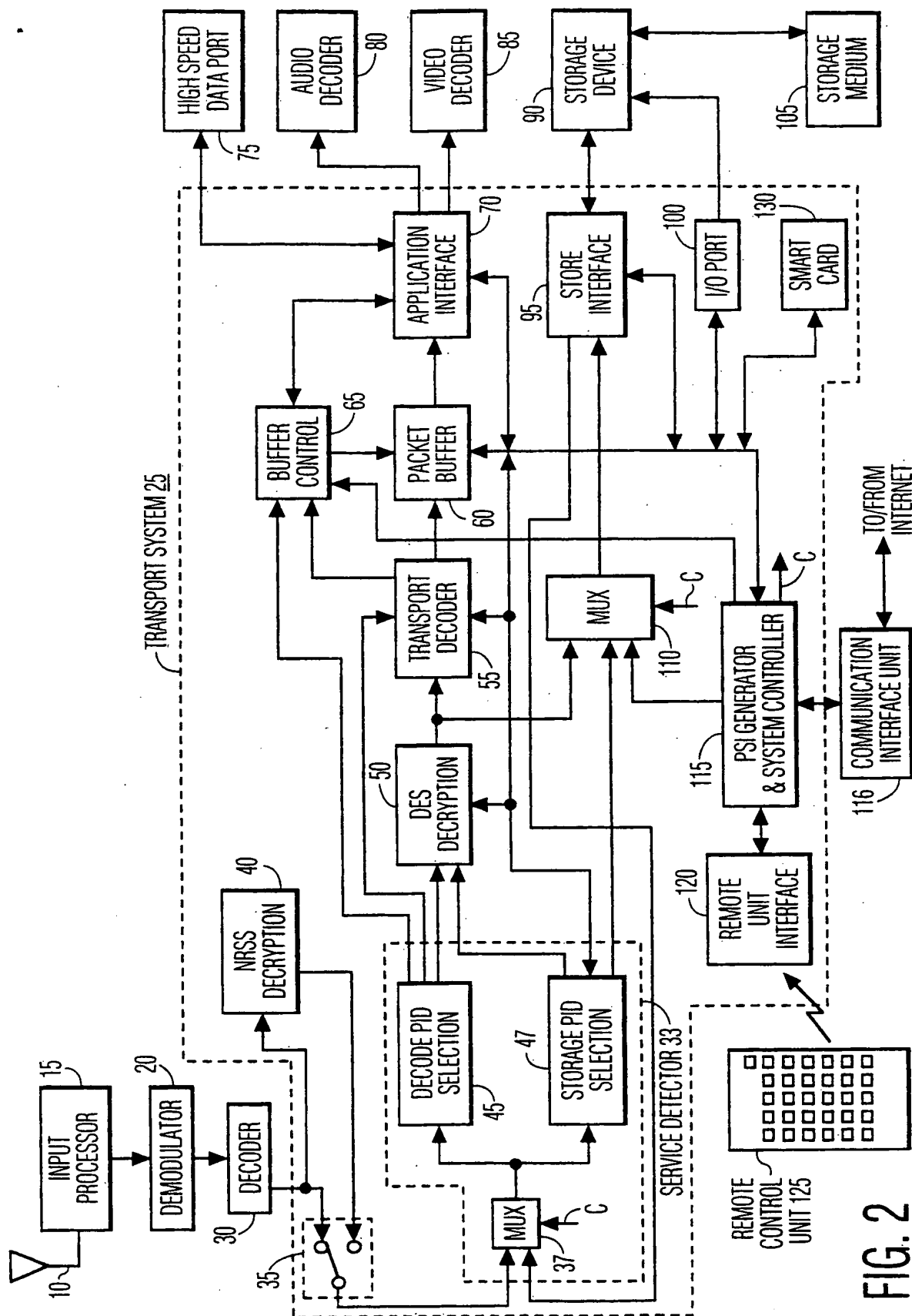


FIG. 2

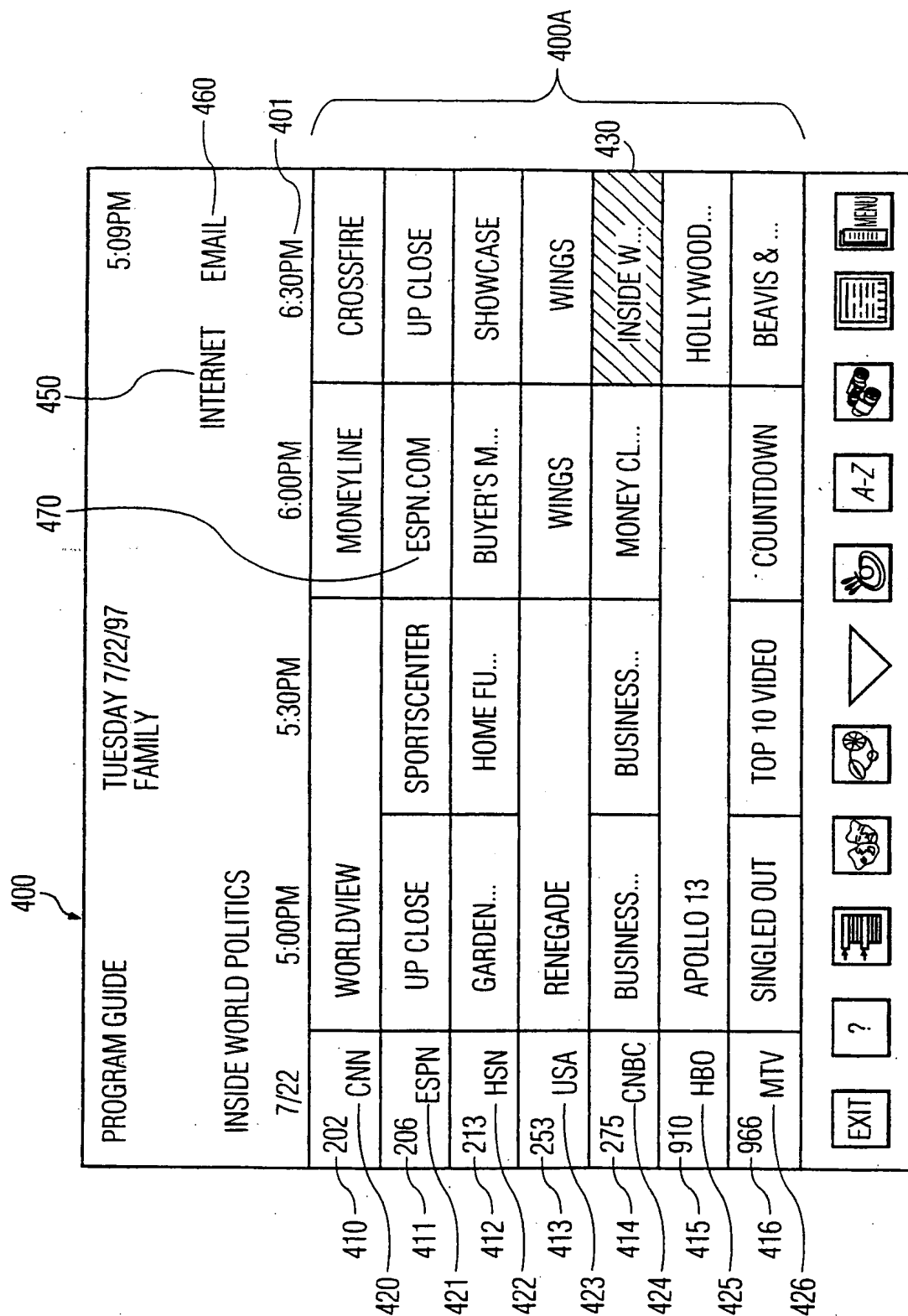


FIG. 4

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/30632

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N5/445

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|----------|--|-----------------------|
| X | WO 98 10589 A (STARSIGHT TELECAST INC) 12 March 1998 (1998-03-12) | 1 |
| Y | page 16, line 11 -page 18, line 29 | 2,4-6,8, 9 |
| Y | US 5 585 866 A (DARATA PAUL ET AL) 17 December 1996 (1996-12-17) | 2,5,6,8, 9 |
| Y | EP 0 793 387 A (TOKYO SHIBAURA ELECTRIC CO) 3 September 1997 (1997-09-03) | 4 |
| A | WO 98 26584 A (PREVUE INTERNATIONAL INC) 18 June 1998 (1998-06-18) | 1-9 |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

*** Special categories of cited documents :**

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

10 April 2000

Date of mailing of the international search report

17/04/2000

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